AF/JW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Bryan Prucher	Confirmation No. 2750
Serial No:	10/714,328	
Filed:	November 14, 2003	
Group Art Unit:	1725	
Examiner:	Maria Alexandra Elve	
Title:	METHOD OF MANUFACTURING DISPERSION STRENGTHENED COPPER AND/OR HYPER-NUCLEATED METAL MATRIX COMPOSITE RESISTANCE WELDING ELECTRODES	
Atty. Docket No.:	PBP-111-A	

CERTIFICATE OF MAILING AND COVER SHEET

MAIL STOP: APPEAL BRIEF - PATENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Transmitted herewith is an AMENDED APPEAL BRIEF; a Certificate of Mailing and Cover Letter; and a stamped return postcard, deposited with the United States Postal Service as First Class Mail and addressed to: Mail Stop: APPEAL BRIEF - PATENT Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 29th day of December, 2006.

__X__ No additional fee is required.

_____ Our check in the amount of $_____ is enclosed.

__X__ Please charge any additional fees or credit overpayment to Deposit Account No. 50-2815.

Carol A. Offer

Attorney Reference: PBP-111-A PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant/Appellant:	Bryan Prucher	Confirmation No. 2750
Serial Number:	10/714,328	
Filing Date:	November 14, 2003	
Group Art Unit:	1725	
Examiner:	Maria Alexandra Elve	
Title:	METHOD OF MANUFACTURING DISPERSION STRENGTHENED COPPER AND/OR HYPER-NUCLEATED METAL MATRIX COMPOSITE RESISTANCE WELDING ELECTRODES	

AMENDED APPEAL BRIEF

Hon. Commissioner of Patents
P.O. Box 1450
Washington, D.C. 22313-1450

Sir:

In response to a Notice of Noncompliant Amendment (dated 11/29/2006), please enter the following Amended Appeal Brief in connection with the above-identified matter:

(i) Real party in interest.

The real party in interest is the applicant Bryan Prucher.

(ii) Related appeals and interferences.

There are no other pending or related appeals and/or interferences in connection with this matter.

(iii) Status of claims.

Claims 1-21 were filed with this Application. During prosecution, Claim 1, 13, and 18 were amended and Claims 4, 12, 14, and 15 were cancelled. Accordingly, Claims 1-3, 5-11, 13 and 16-21 are pending in this Appeal. Of these, Claims 1, 13, and 19 are independent.

(iv) Status of amendments.

An Amendment to a first Office Action (dated May 13, 2005) was filed October 17, 2005.

A Final Rejection issued January 10, 2006.

An Amendment After Final and a Notice of Appeal were filed April 17, 2006.

In a Communication (dated May 2, 2006), the Examiner contended that the Amendment After Final raised new issues and would not be entered.

An Appeal Brief was filed June 15, 2006

A Notice of Noncompliant Brief issued August 15, 2006.

A Reply (a corrected "Appeal Brief") to this Notice was filed September 18, 2006.

A Notice of Noncompliant Brief issued November 29, 2006.

This Amended Appeal Brief is submitted in response to the (November 29, 2006) Notice of Noncompliant Brief.

(v) Summary of claimed subject matter.

The present invention pertains to a method of manufacturing a resistance electrode via thixomolding or cold molding wherein a powdered metal material is compacted into a preform which is thereafter sintered. The resulting preform is then finished into the electrode by cold forming or semi-solid molding i.e. thixomolding. The powdered metal is a copper-based welding alloy and includes a dispersion strengthened copper and/or hyper-nucleated metal matrix having a non-ferrous alloy powder as well as on elemental metal, such as silver, is incorporated therewith.

According to the present invention as detailed below, desirably, HNMMC, DSC, or other non-ferrous powder is converted directly into a form suitable for cold forming, or semi-solid molding, and then into a final shape.

According to this invention, as exemplified by claim 1 and detailed on page 5, ¶ [0018], a method of manufacturing dispersion strengthened copper and/or hyper-nucleated metal matrix composite resistance welding electrodes comprises the steps of:

compacting a powdered metal into a desired pre-form densified compact shape,

sintering the compact shape, preferably under an inert atmosphere, and

cold forming or pre-heating and thixomolding, as required, the resultant sintered powdered metal compact shape into its final net shaped finished electrode form.

If the net shape final electrode form can be achieved directly in the compacting and densifying step, then the subsequent step of cold forming is not necessary.

Although not necessarily limited to any specific powdered metal material in its application, this process is especially suitable for making resistance welding electrodes from dispersion strengthened copper (DSC) and/or hyper-nucleated metal matrix composite (HNMMC) powdered material. However, it is contemplated that the present invention can be used with other non-ferrous powder metals, including, *inter alia*, various conventional copper-based welding alloys, such as copper-chrome-zirconium, copper-zirconium, beryllium-copper and the like.

According to an important aspect of this invention, as exemplified by claim 2 and detailed on page 6, ¶ [0021], this invention is directed to a product manufactured by the method of claim 1.

According to this invention, as exemplified by claim 13 and detailed on page 6, ¶ [0024], a method of manufacturing a resistance welding electrode comprises the steps of:

preparing an amount of metal powder, wherein said metal powder is dispersion strengthened copper and/or a hyper-nucleated metal matrix composite,

compacting and densifying the metal powder into a pre-form having a desired shape, said compacting and densifying producing a pre-form having a density in excess of 85% of theoretical density,

sintering the pre-form in an inert atmosphere, and

shaping the resultant sintered metal powder pre-form into a final net shaped finished electrode form.

According to the method of claim 13, the step of shaping includes cold forming, and a semi-solid molding process. In one aspect, the semi-solid molding process comprises thixomolding.

Further in support of the thixomolding process and according to the method of claim 13, the step of preparing an amount of metal powder includes introducing a second phase by mechanically alloying a major amount of the dispersion strengthened copper and/or hyper-nucleated metal matrix composite with a minor amount of other lower melting point elemental non-ferrous alloy powders prior to compacting and sintering. The step of sintering is carried out at a temperature sufficient to wet out a portion of the minor component within the alloy pre-form, the sintering being at a temperature from about 1550°F to about 1,850°F.

Preferably, the minor amount of other elemental non-ferrous alloy powder is selected from the group consisting of silver and in an amount sufficient to change a desired physical property of the pre-form.

Finally, and according to this invention, as exemplified by claim 19, a method of making a resistance welding electrode is detailed, the method comprising the steps of:

providing a supply of a suitably prepared metal powder mechanically alloyed with another metal powder to introduce a second phase, compacted and sintered into a billet,

raising the temperature of the billet to a semi-solid state to form a semi-solid slurry of nearly spherical solid particles suspended in a liquid matrix, and feeding the billet into the injection chamber of an injection molding machine, and

injecting the slurry into a preheated mold to make a final net shape or a perform shape for subsequent cold forming.

As an aspect of this method, as detailed on page 8 ¶ [0033] and page 9 ¶ [0041], the suitably prepared metal powder is dispersion strengthened copper and/or hyper nucleated metal matrix composite. Further, the other metal powder being mechanically alloyed for the purpose of introducing a second phase is silver.

(vi) Grounds of Rejection.

Claim 7 is rejected under 35 USC Section 112, second paragraph, as being indefinite.

Claims 1-3 and 5-7 stand rejected under 35 USC 102 (a) as being anticipated by *Schimamura* et al., U.S. Patent No. 5,004,498.

Claims 8-11, 13 and 17 stand rejected under 35 USC 103(a) as being unpatentable over *Schimamura et al.* and further in view of *Nadkarni* et al., U.S. Patent No. 4,315,777.

Claim 16 and 19-20 stand rejected under 35 USC 103(a) as being unpatentable over *Schimamura* et al. and *Nadkarni* et al., as stated above, and in further in view of *Kato et al*, U.S. Patent No. 5,685,357.

Claim 18 stands rejected under 35 USC 103(a) as being unpatentable over *Schimamura* and *Nadkarni* and in further in view of *Prucher*, U. S. Patent No. 5,041,711.

Claim 21 is rejected under 35 USC 103(a) as being unpatentable over *Schimamura* and *Nadkarni*, Kato and *Prucher* and further in view of the fact that it would have been obvious to combine all of these teachings together to arrive at the invention of claim 21.

(vii) Argument.

At the outset, it is to be noted that the present invention is related to a simplified method for forming various dispersion strengthened copper products and, in particular, electrodes wherein cold forming and/or semi-solid molding is used thereby obviating multiple steps heretofore required in the prior art. For the reasons pointed out hereinbelow, it is submitted that the Examiner's rejections are in error and should be withdrawn.

Claim Rejection – 35 USC Section 112, Second Paragraph

The Examiner rejects Claim 7 under 35 USC Section 112, second paragraph, as being indefinite. In this rejection, the Examiner notes that the instant claim states "chrome" and inquires if the applicant is referring to chromium? The Examiner requires clarification.

The Examiner's rejection was not fully understood. Support for the limitation is found in the specification on pages 5-6, ¶ [0020].

As an aside, to advance prosecution and simplify issues, Applicant submitted the above noted Reply After Final, in which independent Claims 1, 13, and 19 were amended and dependent claims 3-7, 14-15, 18, 20, and 21 were cancelled. Minor amendment of the independent claims improved the clarity of the claims and/or incorporated certain of the limitations of the dependent claims that would have been cancelled by the Reply. The Reply After Final was not entered and Claim 7 is as originally presented.

In view of the comments herein, and clear support for the limitation, Applicant's Attorney believes that the Board should reverse the Examiner's rejection of Claim 7 under 35 USC Section 112.

Claim Rejection – 35 USC Section 102 (b), Anticipation

Claims 1-3 and 5-7 stand rejected under 35 U.S.C. 102(b) as being anticipated by *Schimamura* et al., U.S. Patent No. 5,004,498. The Examiner contends that *Schimamura* et al. teaches an electrode made of dispersion strengthened copper alloy, which is manufactured by sintering and reducing the alloy. The Examiner further contends that the alloying elements are disclosed in *Schimamura* et al.

In order to anticipate an invention it is a prerequisite that each and every element of the invention, as claimed, be shown by the alleged anticipating reference. *Schimamura* et al is deficient in this requirement.

All the reference discloses is the potential of "plastic deformation" with regard to cold forming. The reference also teaches equivalency, at Column 8, Lines 25-30, of a secondary process and/or a thermal treatment, and plastic deformation or machining. This is exactly the type of process, which the present invention seeks to improve upon. There is no subsequent machining. Nor is there a subsequent thermal treatment after the pre-form is made. Rather, there is either cold forming into the final net shape or semi-solid molding into the final shape. Thus, it is believed that *Shimamura et al.* does not anticipate the claims for its failure to teach this.

Accordingly, it is respectfully requested that the rejection be withdrawn. Applicant's Attorney believes that the Board should reverse the Examiner's Section 102(b) rejection.

Claim Rejections – 35 USC 103 (a), obviousness

The remaining rejections are predicated on the correctness of the Examiner's combinations of references and the analysis required under 35 USC 103(a) required to conclude that the claims are unpatentable as being obvious in view of the combination of references relied upon by the Examiner in reaching his conclusion.

Applicant's Attorney disagrees with the Examiner's analyses and believes the Examiner's obviousness rejections are flawed and should be reversed by this Board.

According to the MPEP (706.02), to establish obviousness:

1. There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

2. There must be a reasonable expectation of success.

3. The prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

Applicant's Attorney submits that there is no suggestion or motivation in the prior art relied upon by the Examiner that would lead one of ordinary skill in the art to combine the references and that would also suggest a reasonable likelihood of success. In this case, the Examiner never established a motivation, teaching or suggestion to combine the references relied upon. In this case, the only suggestion for the Examiner's combination of the isolated teachings of the applied references improperly stems from Applicant's disclosure and not from the applied prior art. That is, the Examiner is using Applicant's disclosure as a road map to pick and choose only so much from each of a myriad of references as needed to assemble the invention, while ignoring the full teaching or features of a reference. The Examiner uses impermissible hindsight to create mosaics, which is contrary to the analysis required under 35 USC 103 (a).

Applicant's Attorney submits that the Board should reverse and not uphold each of the Examiner's obviousness rejections under 35 USC Section 103.

Claims 8-11, 13 and 17 are rejected under 35 U.S.C. 103(a) over *Shimamura et al.* and further in view of *Nadkarni et al.* The Examiner contends that the secondary reference to *Nadkarni* et al. discloses the sintering of a copper alloy. The Examiner concludes that it would have been obvious at the time of the invention to determine the requisite densities and pressures from the *Nadkarni et al.* reference.

It is submitted that the Examiner, in postulating this rejection, is selectively picking and choosing isolated features from a combination of references to meet each required claim limitation in order to negate patentability. Without the interposition of Applicant's disclosure, there is simply no suggestion in the art to combine their teachings. That is, the Examiner is using Applicant's disclosure as a rod map to find references that have isolated features to meet Applicant's claim requirements.

It is axiomatic that in order to combine references that the suggestion for the combination of same must be derived from the references themselves. None of the references even remotely hint at taking their respective teachings or portions of their respective teachings and combine same.

While *Nadkarni et al.* discloses the sintering of a copper alloy and the pressures for densifying to theoretical densities, it is submitted that this reference does not provide the deficiencies to *Shimamura et al.* that would be prerequisite to negate patentability. Specifically, while *Nadkarni et al.* relates to dispersion strengthening of copper and recited densities, it still does not teach the subsequent step of forming the final net shape product by either cold forming or semi-solid molding. Rather, the reference teaches that the alloy can be made. *Nadkarni et al.* does not teach its further processing into the final net shape by any process, be it the cold forming or the semi-solid molding as required herein.

Thus, it is believed that the Examiner's rejection of Claims 8-11, 13 and 17 under 35 U.S.C. 103(a) over *Shimamura et al.* and further in view of *Nadkarni et al.* is in error and should be reversed by the Board.

Claims 16 and 19-20 are rejected under 35 USC 103 (a) stand rejected under 35 USC 103(a) as being unpatentable over *Schimamura* et al. and *Nadkarni* et al., as stated above, and in further in view of *Kato et al*, U.S. Patent No. 5,685,357. The Examiner contends that *Kato et al.* teaches thixomolding and, therefore, it would have been obvious to combine its teachings with those of the other two references.

It is submitted that the Examiner, in postulating this rejection, is again assembling a mosaic of references in order to negate patentability. Without the use of Applicant's disclosure as a road map, there is simply no suggestion in the art to combine isolated features of their teachings.

Nothing in the art relied upon by the Examiner, whether considered alone or in combination teaches the formation of an electrode by the process defined herein. There is simply nothing other than the present disclosure and the Examiner's unsubstantiated conclusion to suggest combining their references. The three references are belied indicative of such impermissible picking and choosing of isolated features, solely to meet the requirements of the claims herein.

Thus, it is believed that the Examiner's rejection of Claims 16 and 19 – 20 under 35 U.S.C. 103(a) over *Shimamura et al.* and further in view of *Nadkarni et al.* and further in view of *Kato et al* is in error and should be reversed by the Board.

Claim 18 stands rejected under 35 USC 103(a) as being unpatentable over *Schimamura* and *Nadkarni* and in further in view of *Prucher*, U. S. Patent No. 5,041,711. The Examiner

contends that while the primary references do not teach the use of silver in the sinter, *Prucher* discloses a spot welding electrode, which uses silver in the sintering. Therefore, the Examiner concludes it would have been obvious to include the teachings of Prucher with the primary references to derive the invention of claim 18.

The same arguments made above by Applicant's Attorney regarding the Examiner's obviousness rejection of Claims 16 and 19-20 applies equally to the rejection of Claim 18.

Nothing in the art even remotely hints at the steps of Claim 18 without using the present disclosure for reconstructive hindsight.

While *Shimamura* discusses a high resistance wire welding electrode, nothing in the art teaches or even remotely hints at the steps required by Claim 18 absent the use of the present disclosure.

While *Prucher* appreciates the utilization of silver, *Prucher* in no manner teaches electrode formation by the present process.

Only the present disclosure teaches the use of silver in the pre-form and thixomolding to form an electrode. The silver is in an amount sufficient to change a desired physical property of the pre-form. Desirably, changes to physical properties, such as electrical conductivity, thermal conductivity, coefficient of thermal expansion, etc. can be effected with precision.

The Examiner's three reference rejection is believed again to weigh against there being a suggestion or motivation in the prior art for the Examiner's combination. The only basis for the combination is believed due the Examiner's hindsight selection of isolated features solely to meet Applicant's claim requirements.

Thus, it is believed that the Examiner's rejection of Claim 18 under 35 U.S.C. 103(a) over *Shimamura et al.* and further in view of *Nadkarni et al.* and further in view of *Prucher* is in

error and should be reversed by the Board.

Claim 21 is rejected under 35 USC 103(a) as being unpatentable over *Schimamura et al.*, and *Nadkarni et al.*, and *Kato et al.,* and *Prucher et al.*, and further in view of the following:

> *Schimamura et al.* and *Nadkarni et al* do not teach thixo-molding (semi-solid forming) or the use of silver in the sinter;

> *Kato et al* discloses forming metallic particle feed material in an injection molding machine. Parts are formed by thixo-molding This is used for a variety of metal parts;

> Prucher discloses a spot welding electrode, which uses silver in the sinter.

The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention to use thixo-molding, as taught by Kato et al and the use of silver as taught by Prucher in the Schimamura et al. and Nadkarni et al. *system* because of the enhanced product, both mechanically and electrically. (Underlined italic emphasis supplied herein)

The Examiner now picks and chooses isolated features from four references. Nothing in the art teaches the formation of an electrode by the process defined herein. As to claim 21, the same arguments given above by Applicant's Attorney against the Examiner's obviousness rejection of (a) Claims 8-11, 13, and 17; or Claims 16 and 19-20, or (c) Claim 18, apply herein to Claim 21.

Applicant's Attorney does not agree that it would have been obvious to one of ordinary skill in the art at the time of the invention herein to have combined these teachings together to arrive at the invention of claim 21.

Assuming arguendo that the references show the elements required by the claim, Applicant's Attorney does not believe that the Examiner has presented a credible line of

reasoning as to why the artisan reviewing only the collective teachings of the references would have found it obvious to selectively pick and choose various elements and/or concepts from the several references relied on by the Examiner to arrive at the claimed invention.

First the Examiner admits that the basic references to *Schimamura et al.* and *Nadkarni et al* do not teach thixo-molding (semi-solid forming) and do not teach the use of silver in the sinter. To meet the claim requirements, the Examiner reconstructs the "system" of the basic references to use a thixo-molding process, as disclosed in *Kato et al.* However, *Kato* does not disclose the use of silver or sintering. Accordingly, to meet the claim requirements, the Examiner then further reconstructs the "system" to include the spot electrode of Prucher, which uses silver in the sinter. The Examiners rationale - an enhanced product, both mechanically and electrically.

The Examiner's four references teach different processes, materials, and methods, such as relating to various ranges in the steps of the method (e.g., temperature, pressure, time and the like), as well as materials used (e.g., percentages, densities, atomic number, atom size, and the like). Each reference was confronted with a different problem and presented a unique solution to that problem. However, changes in ranges and/or materials in metallurgical processes, no matter how minor, can make a substantial difference in the result, and the results are not predictable.

While the date of a patent is not dispositive of obviousness, but perhaps of interest as to what those skilled in the art appreciated in terms of producing an electrode that is enhanced both electrically and mechanically, Schimamura issued in 1991, Nadkarni issued in 1982, Kato issued in 1997, and Prucher issued in 1991. Seemingly, one skilled in the art looking for enhanced products, both electrically and mechanically, would have come upon the obvious combination before now. Applicant's invention herein provides precision in the manufacture of an electrode.

The Examiner has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. A claim cannot be used as a blue print for abstracting isolated teachings from references. The Examiner concedes that the primary references do not teach two of the critical claim limitations and thus is forced to reconstruct four references relating to different metallurgical process or materials. The Examiner's reconstruction is impermissible hindsight.

There is simply nothing other than the present disclosure and the Examiner's unsubstantiated conclusion to suggest combining their references.

Thus, it is believed that the Examiner's rejection of Claim 21 under 35 U.S.C. 103(a) over *Shimamura et al.* and further in view of *Nadkarni et al.* and further in view of *Kato* , and further in view of *Prucher* and further in view of the Examiner's reconstructing the collective teachings of these references is in error and should be reversed by the Board.

CONCLUSION

For the reasons stated, it is respectfully requested that the Board reverse the Examiners rejections.

Respectfully submitted,

Charles D. Lacina, Reg. 28094
The Weintraub Group, P.L.C.
32000 Northwestern Highway, Suite 240
Farmington Hills, MI 48334
(248) 865-9430

Dated: Fri Dec. 29, 2006

(viii) Claims appendix

1. (Amended). A process of manufacturing a resistance welding electrode, comprising the steps of:

compacting a powdered metal material into a desired pre-form densified compact shape,

sintering the compact shape in an inert atmosphere, and

shaping the resultant sintered powdered metal compact shape into its final net shaped finished electrode form by either cold forming or semi-solid molding.

2. (Original). The product produced by the process of Claim 1.

3. (Original). The process as claimed in Claim 1, wherein said powdered metal material is dispersion strengthened copper and/or a hyper-nucleated metal matrix composite.

4. (Cancelled).

5. (Original). The process as claimed in Claim 3, wherein said powdered metal is alloyed with a minor amount of a non-ferrous powder metal.

6. (Original). The process as claimed in Claim 5, wherein said non-ferrous powder metal is a copper-based welding alloy.

7. (Original). The process as claimed in Claim 6, wherein said copper-based welding alloy is selected from the group consisting of copper-chrome-zirconium, copper-zirconium, and beryllium-copper.

8. (Original). The process as claimed in Claim 1, wherein the step of compacting includes continuously applying a compressive force until a density of at least about 85% of theoretical density is achieved.

9. (Original). The process as claimed in Claim 8, wherein the compressive force is

at least about 50,000 psi.

10. (Original). The process as claimed in Claim 1, wherein the step of sintering is carried out at least in part at a temperature of about 1550°F to about 1,850°F and the inert atmosphere is argon, xenon or hydrogen.

11. (Original). The process as claimed in Claim 9, wherein the step of sintering is carried out for at least about 60 minutes to about 120 minutes.

12. (Cancelled).

13. (Amended). A method of manufacturing a resistance welding electrode, comprising the steps of:

preparing an amount of metal powder, wherein said metal powder is dispersion strengthened copper and/or a hyper-nucleated metal matrix composite,

compacting and densifying the metal powder into a pre-form having a desired shape, said compacting and densifying producing a pre-form having a density of at least 85% of theoretical density,

sintering the pre-form in an inert atmosphere, and

shaping the resultant sintered metal powder pre-form into a final net shaped finished electrode form by either cold forming or semi-solid molding.

14. (Cancelled).

15. (Cancelled).

16. (Original). The method as claimed in Claim 15, wherein the semi-solid molding process comprises thixomolding.

17. (Original). The method as claimed in Claim 13, wherein

said step of preparing an amount of metal powder includes alloying a major

amount of said dispersion strengthened copper and hyper-nucleated metal matrix composite with a minor amount of other elemental non-ferrous alloy powders, and

said step of sintering is carried out at a temperature sufficient to alloy said minor and major metals into said pre-form, said sintering temperature being from about 1550°F to about 1,850°F.

18. (Amended). The method as claimed in Claim 17, wherein

said minor amount of other elemental non-ferrous alloy powder is selected from the group consisting of silver and in an amount sufficient to change a desired physical property of the pre-form, and

said semi-solid molding process comprises thixomolding.

19. (Original). A method of making a resistance welding electrode, comprising:

providing a supply of a suitably prepared metal powder mechanically alloyed with another metal powder to introduce a second phase, compacted and sintered into a billet,

raising the temperature of the billet to a semi-solid state to form a semi-solid slurry of nearly spherical solid particles suspended in a liquid matrix, and feeding the billet into the injection chamber of an injection molding machine, and

injecting the slurry into a preheated mold to make a final net shape or a perform shape for subsequent cold forming.

20. (Original). The method as claimed in Claim 19, wherein said suitably prepared metal powder is dispersion strengthened copper and/or hyper nucleated metal matrix composite.

21. (Original). The method as claimed in Claim 19, wherein the other metal powder being mechanically alloyed for the purpose of introducing a second phase is silver.

(ix) Evidence Appendix

None.

(x) Related Proceedings Appendix:

None.